International Journal of Environmental Sciences
ISSN: 2229-7359
Vol. 11 No. 23s, 2025
https://www.theaspd.com/ijes.php

Pharmacological Evaluation Of Dolichandrone Falcate Extract For Gastro-Protective Activity

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Abstract: *Gastric ulcer is a common treatable clinical situation which affects patient quality of life and causes economic burdens on the health care system. It occurs due to weakened defensive mechanisms in gastric mucosa. Changing lifestyles, including smoking, alcohol consumption, over the counter use of NSAIDs, and H. pylori infection have increased the prevalence of gastric ulcers. Alcoholics have the risk of upper gastrointestinal bleeding compared to non-alcoholics, and this risk is further potentiated with the concurrent use of NSAIDs. Alcohol causes congestion, hemorrhagic lesions with microvascular damage, oedema, and exfoliation of the epithelium. The main aim of this research work is to investigate the gastroprotective, studies of Dolichandrone Falcate.*
Keywords: *Antioxidant activity, Gastro-protective Activity, Dolichandrone Falcate*

INTRODUCTION: Peptic ulcer disease is a problem of the gastrointestinal tract characterized by mucosal damage secondary to pepsin and gastric acid secretion. It usually occurs in the stomach and proximal duodenum; less commonly, it occurs in the lower esophagus, the distal duodenum or the jejunum, as in hypersecretory states, hiatal hernias or ectopic gastric mucosa. Helicobacter pylori infection and the use of non-steroidal anti-inflammatory drugs are the predominant causes of peptic ulcer disease in the United States [1]. H. pylori infection leads to gastroduodenal inflammation, peptic ulceration, gastric lymphoma, and gastric cancer, which has been proven with animal studies and human epidemiological report [2]. H. pylori may induce inflammatory-associated gene expression in gastric epithelial cells, including activation of nuclear factor kappa B (NF-κB), enhance expression of cyclooxygenase-2 (COX-2) and inducible nitric oxide synthase (iNOS), and production of interleukin-8 (IL-8). H. pylori bacteria adhere to the gastric mucosa; the presence of another inflammatory protein and a functional cytotoxinassociated gene island in the bacterial chromosome increases virulence and probably ulcerogenic potential [3]. Peptic ulcer describes a condition in which there is a discontinuity in the entire thickness of gastric or duodenal mucosa that persists as a result of acid and pepsin in the gastric juice. Peptic ulcer is caused due to several causes of abnormal acid secretion, abnormal mucosal defence, reflux of bile and pancreatic juice, genetic predisposition, microbial attack, etc [4].

The recent development of functional foods and pharmaceutical products based on medicinal and food (namely fruits and vegetables) plants has brought improvements to all aspects of life, including the alleviation of physical disorders, the reduction in the use of synthetic antibiotics, and the increase in life expectancy [5]. Indeed, these plants have long been used as safe, effective and sustainable sources of natural antioxidants or free radical scavengers, particularly phenolic compounds, such as phenolic acids, flavonoids, tannins, stilbenes, and anthocyanins [6]. Those phenolics are mostly regarded to confer upon the antioxidant activity of medicinal and food plants, making a marked contribution in the fight against many pathological conditions such as cancer, diabetes, aging, cardiovascular, and other degenerative diseases [7]. Dolichandrone falcata Seem synonym (Markhamia falcata) belonging to Bignoniaceae. The plant is also called 'medhshingi' in Hindi and 'mesasinghi' in Sanskrit. In Ayurveda it is also used as mesha-shringi. Dolichandrone falcata Seem contains alkaloids, flavonoids, sugars, saponins, phenolic, terpenoids, cardiac glycosides, steroids, and amino acids. The medicinal value of leaves and bark is also mentioned in Ayurveda as meshsa-sringhi. In Ayurveda Dolichandrone falcata Seem is used as mesh-shingi for madhuka bite also used as Rasayana drugs. An aqueous extract of the fruit is used for abortion and bark is used as a fish poison. Infusion of powder is given internally in the treatment of acute rheumatism [8]. Green plants synthesize and preserve a variety of biochemical products, many of which are extractable and used as chemical feed stocks or as a raw material for various scientific investigations. *Dolichandrone Falcate* is used for the treatment of digestive system such as dyspepsia and enteritis or intestinal inflammation intestinal diseases. It has been reported that pumpkin is consumed as a diet to increase the pH of fasting gastric sample and the dietetic management of patients undergoing gastric operations is also carried out by supplementation of pumpkin. Considering the easy availability reduced

cost and minimal side effects and information from the literature of discrete applications in digestive tract of the fruits of the plant, the study has the objectives for the prevention of different experimental peptic ulcer (drug such as- aspirin induced; alcohol such as- ethanol induced; stress such as- immobilized and cold induced; surgery such as cerebellar nodular lesion induced; CNL) in rat model. The main aim of this research work is to investigate the gastroprotective, studies of Dolichandrone Falcate

MATERIAL AND METHODS

Collection and identification of plant material: The subject of phytochemistry or plant chemistry has developed in recent years as a distinct discipline, somewhere in between natural product organic chemistry and plant biochemistry and is closely related to both. It is concerned with the enormous variety of organic substances that are elaborated and accumulated by plants and deals with the chemical structures of these substances, their biosynthesis, turnover and metabolism, natural distribution and biological function. Dolichandrone Falcate leaves were collected from local area of Bhopal. Plant material were identified and authenticated by botanist. The plant materials were dried in shade, powdered moderately and pass through sieve No. 10.

Gastro-protective Activity: Methanol extract of Dolichandrone Falcate leaves was found to have higher amount of total phenolic and total flavanoid content than petroleum ether and ethyl acetate extract so methanol extracts were selected for further in vivo Gastro-protective Activity.

Animal Housing and environmental condition: Animals wistar rats weighing between 180-200 gm were selected for Gastro-protective activity of Dolichandrone Falcate leaves extracts. All the animals were segregated into groups of six animal rats each. All animals were housed in air-conditioned rooms with 10-15 air circulation cycles per hour. The relative humidity was maintained between 30-70%, temperature between 22- 25°C and illumination cycle set to 12 hours artificial fluorescent light and 12 hours dark. In each of the polypropylene cages with stainless steel grill top (32.5cm x 21cm), facilities for food and water bottle and bedding of clean paddy husk, the animals were kept in the groups of six. Standard pelleted basal diet and purified water were provided ad libitum to the animals. All the animals were acclamitized to the laboratory conditions before they were used in the experiments. Experimental protocol was approved by Institutional Animal Ethics Committee and ethical norms were strictly followed during all experimental procedures

Acute toxicity study: Evaluation of undesirable effects of methanol extracts of Dolichandrone Falcate leaves were carried out before in vivo study. The acute toxicity study in rat was performed in order to observe undesirable side effects. OECD guidelines 423 were followed for evaluating undesirable effects or toxicity of extracts on animals. The animals of either sex satisfying the conditions of body weight, age, and non-infected/ non-wounded, showing no abnormal behavior was included in the study. Rats of either sex were divided into the groups of 3 animals per group. Methanol extract of Dolichandrone Falcate leaves was administered orally at a dose of 100 mg/kg, 500 mg/kg and 2000 mg/kg body weight to each group every 24 hours. The rats were then critically observed after 30 min, 1hr, 2hr, 3hr, 24 hr for clinical signs, gross behavioral changes and mortality. These observations were continued for a period of 14 days. The maximal safe dose was determined after observing mortalities and behavioral profile for the stipulated time. Further, in accordance with the OECD guidelines, the doses for the study were narrowed out. Simultaneously, animals were observed for following reflexes and behavioural parameters.

Righting reflex: The ability of rats to regain its normal posture when placed on its back, on a flat surface, within 30 seconds was noted.

Pinna reflex: The external auditory meatus of rats was stimulated using a fine hair or thread. In case no activity by the animals on external stimulation, the pinna response was considered as abolish.

Corneal reflex: A fine hair or thread was used to touch the surface of the cornea and the conjunctiva of both the eyes to induce contraction of the orbicular occulis muscle. The reflex was considered abolished when either eye elicits no reflex for 1 second.

Body weight: Changes in body weight were observed in mice during entire period of 14 days.

Clinical Abnormalities: Any unusual abnormalities like changes in fur of the animals, excessive urination or defecation, or any abnormal behavior was noted.

Evaluation of gastroprotective activity: An ulcer is the result of an imbalance between aggressive and defensive factors. On one hand, too much acid and pepsin can damage the stomach lining and cause

ulcers. On the other hand, the damage comes from some other causes, making the stomach lining susceptible to even at an ordinary level of gastric acid. A peptic ulcer of the stomach is called a gastric ulcer, of the duodenum, a duodenal ulcer; and of the esophagus, an esophageal ulcer. An ulcer occurs when the lining of these organs is corroded by the acidic digestive juices which are secreted by the stomach cells. Peptic ulcer disease is common, affecting millions of people yearly. Sources of chemicals and drugs Ranitidine - standard drug-gift sample from Zydus Cadilla, Ahmedabad.

Gastro Protective Activity of extract of *Dolichandrone Falcate* leaves were performed on various ulcer induce model including aspirin + Pylorus ligation induced, acetic acid induced chronic ulcer, HCl- ethanol induced ulcer. Methanol extracts of *Dolichandrone Falcate* leaves were found more potent in antioxidant activity so ethanol extract were selected for further gastroprotective activity. Dried extracts were redissolved in water using carboxymethyl cellulose (CMC) as suspending agent and this suspension was used for gastro-protective activity. All the other chemicals were obtained from local sources and were of analytical grade.

Table 1: Animal group for gastroprotective activity of *Dolichandrone Falcate* leaves extract

Groups	**Treatment**
Normal control	1% CMC (1ml/kg)
Disease control	1% CMC (1ml/kg)
Standard	Ranitidine (50mg/kg b.w) in 1% CMC
MDF (100 mg/kg)	Methanol extract of *Dolichandrone Falcate* leaves (100 mg/kg)
MDF (200 mg/kg)	Methanol extract of *Dolichandrone Falcate* leaves (200 mg/kg)
MDF (300 mg/kg)	Methanol extract of *Dolichandrone Falcate* leaves (300 mg/kg)

Each group has six animals (wistar albino rats of either sex)

Aspirin + Pyloric ligation model: Among the various methods available pyloric ligation method has been widely used in the screening model for gastroprotective activity. In the present work gastroprotective activity of selected plant extracts were tested against aspirin + Pylorus ligation gastric ulcer models. An decrease in the pH, increase of gastric juice content, lesions formation in the GI tract are the indices of ulcer formation. The ability of above-mentioned extracts to increase the pH, decrease in the volume of gastric juice and less ulcer formation near to standard values are indication of their gastroprotective potential.

Table 2 Animal group for gastroprotective activity of *Dolichandrone Falcate* leaves extract using Aspirin + Pyloric ligation model

Groups	**Treatment**
Normal control	1% CMC (1ml/kg)
Disease control	1% CMC (1ml/kg); Aspirin (200mg/kg/day p.o.) + PL
Standard	Ranitidine (50mg/kg b.w) in 1% CMC; Aspirin (200mg/kg/day p.o.) + PL
MDF (100 mg/kg)	Methanol extract of *Dolichandrone Falcate* leaves (100 mg/kg/day p.o.); Aspirin (200mg/kg/day p.o.) + PL
MDF (200 mg/kg)	Methanol extract of *Dolichandrone Falcate* leaves (200 mg/kg/day p.o.); Aspirin (200mg/kg/day p.o.) + PL
MDF (300 mg/kg)	Methanol extract of *Dolichandrone Falcate* leaves (300 mg/kg/day p.o.); Aspirin (200mg/kg/day p.o.) + PL

Each group has six animals (wistar albino rats of either sex)

The animals were divided into seven groups, each containing six animals. Group I served as normal control, Group II served as Aspirin (200 mg/kg, p.o.)+ pyloric ligation control. Group III received Ranitidine (50 mg/kg, p.o.) as standard drug+Aspirin+ PL. Groups IV and V and VI received plant extract

at the dose of 100, 200 and 300 mg/kg, p.o+PL. Groups II–VI received the assigned drug treatment for the respective 10 days daily. From days 8 to 10, animals of all groups except group I received aspirin orally as an aqueous suspension at the dose of 200 mg/kg, 2 h after the administration of the drugs. Animals in all groups were fasted for 18 h after the assigned treatment, anesthetized and the pyloric was ligated. The rats were sacrificed after 4 h by excess anesthesia (ether). The stomach was removed, opened along greater curvature and the gastric lesions were observed. The gastric ulcers were counted and the ulcer index was determined. The gastric juice was collected, centrifuged and the volume of the supernatant was expressed as mL/ 100 gm.b.wt. Free acidity and total acidity were determined by titrating with 0.01N NaOH using Topfer's reagent and phenolphthalein as indicators. The free and total acids were expressed as mEq/L. The total acid output was determined and expressed as mEq/L.

Aspirin was suspended in 1% CMC solution and administered orally in the dose of 200 mg/kg in non-fasted rats once daily for 5 days. The animals were divided into six groups, each containing six animals. Group I served as normal control, Group II served as Aspirin (200 mg/kg, p.o.)+ pyloric ligation control. Group III received Ranitidine (50 mg/kg, p.o.) as standard drug+Aspirin+ PL. Groups IV and V and VI received plant extract at the dose of 100, 200 and 300 mg/kg, p.o+PL. Groups II–VI received the assigned drug treatment. On the 6th day, pylorus ligation was performed under ether anaesthesia on 36 h fasted rats, immediately after pylorus ligation aspirin treatment was given. Drinking water was withheld after pylorus ligation on 6th day in each rat and gastric juice was allowed to accumulate for a period of 4 h. After that blood samples (2-3 ml) were collected from the retro-orbital plexus of all groups using microcapillary tube.

About 2-3 ml of blood was collected in a sterile serum vacutainer and kept undisturbed at 37° for 45 min. During this period, serum exuded and the clot retracted. The serum was aspirated using a sterile pipette after centrifugation at 3000 rpm for 15 min. The rats were then killed by an overdose of anaesthetic ether and stomachs were cut along greater curvature. The gastric contents were then collected through the oesophagus and measured for volume. They were centrifuged at 3000 rpm for 20 min. The supernatant was subjected to analysis for titrable acidity and total volume of gastric juice. The stomachs were opened along the greater curvature, and the mucosa was rinsed with cold normal saline to remove blood contaminant, if any. The sum of the length (mm) of all lesions for each stomach was used as the ulcer index (UI). In each rat, the macroscopic injury of each ulcer was scored by an independent observer according to a scale ranging from 0 to 4 as follows: (0) no macroscopic changes, (1) mucosal erythema only, (2) mild mucosal edema, slight bleeding or small erosions, (3) moderate edema, bleeding ulcers or erosions, and (4) severe ulceration, erosions, edema and tissue necrosis.

After examination, the stomachs were weighed and immediately immersed in alcian blue solution for determining the mucus wall thickness. Only pylorus ligation was performed on one parallel group of animals which received only 1% CMC solution. The same parameters were checked in this group so as to differentiate the additional effects of aspirin upon pylorus ligated group. One parallel group received only 1% CMC in which pylorus ligation was not performed. All data are expressed as mean±standard error of the mean (SEM) of 6 rats per experimental group.

Acetic acid-induced ulcer model: The ulcers were induced by the local application of acetic acid to serosal surface of the stomach. Under anesthesia, the midline incision was made, and the stomach was taken out. On the serosal surface of the glandular portion of the stomach, 0.2 ml of 100% acetic acid (anterior gastric wall) was injected. After the treatment, the rats were sacrificed, and stomachs were removed and weighed, fixed in 10% neutral buffered formalin, embedded in the paraffin wax, sectioned at 5 μm, stained with hematoxylin and eosin and then examined by the light microscopy.

HCl and ethanol induced model: Animals were deprived of food for 24 h in a cage with wide-mesh wire bottoms to prevent coprophagia before conducting the experiment. One hour after the last (the 14th) administration of vehicle, an HCl and ethanol mixture (98% ethanol containing 150 mM HCl) was orally administered to mice at 5 mL/kg of body weight**.** Untreated control mice were administered an equal volume of distilled water instead of ethanol mixture solution. ethanol (EtOH)-induced ulcer model is most preferential used animal model because it enables rapid induction and can be widely employed to test the efficacy of potential drugs independent of gastric acid secretion. Moreover, the ethanol-induced gastric ulcer model resembles acute gastric ulcers in human. In recent years, there has been an increased

effort to identify herbal derived therapeutic agents with reduced side effects for the treatment of gastric ulcers caused in animal models.

RESULT AND DISCUSSION

Acute Toxicity studies of as per as per OECD guidelines: Extracts of the *Dolichandrone Falcate* leaves were evaluated for acute toxicity as per the OECD guidelines 423 for 14 days in albino rats. Righting reflex, corneal reflex and pinna reflex were found normal for single dose oral administration of 2000 mg/kg of body weight of albino rats. Clinical abnormalities like excessive defecation, urination or changes in fur were not noticed during the study period and extracts showed no abnormalities or mortality up to the single dose oral administration of 2000 mg/kg during the study period of 14 days. However slight changes in body weight (increased) of animals were noted during the study period. Further, no casualties and no abnormal behavioural pattern were observed in experimental animals at single dose oral administration of the extracts during 14 day study period. From the results of acute toxicity studies $1/10^{th}$, $1/20^{th}$ doses were selected for the experimental study.

Gastro Protective Activity: Gastro Protective Activity of extract of Dolichandrone Falcate leaves were performed on various ulcer induce model including aspirin Pylorus ligation induced, acetic acid induced chronic ulcer, HCl- ethanol induced ulcer. Ethyl acetate and methanol extracts of *Dolichandrone Falcate* leaves were found more potent in antioxidant activity so both extract were selected for further gastroprotective activity. Methanol extracts of both plant at dose of 100, 200 and 300 mg/kg were tested for gastroprotective activity using above ulcer model.

Effect of *Dolichandrone Falcate* leaves extract on Aspirin + Pylorus ligation induced ulcer: Aspirin+pylorus ligation-induced gastric ulcer model is a useful model to induce severe ulceration in experimental animals. Aspirin causes mucosal damage by interfering with prostaglandin synthesis, increasing acid secretion and back diffusion of H+ ions. The inhibition of mucosal prostaglandin production occurs rapidly following oral administration of aspirin. This is correlated with the rapid absorption of these drugs through the mucos. In pylorus ligation, the digestive effect of accumulated gastric juice and interference of gastric blood circulation are responsible for the induction of ulceration.
In pyloric ligation, the digestive effect of accumulated gastric juice and interference of gastric blood circulation are responsible for the induction of ulceration. Aspirin was administered to PL rats; thus, aspirin further aggravated the acidity and the resistance of the gastric mucosa was decreased thereby causing extensive damage to the glandular regions of the stomach.
Methanol extracts of *Dolichandrone falcate* leaves at a dose of 100 200 and 300 mg/kg b.w., were tested for gastroprotective activity using pyloric ligation rat model. Peptic ulcer is results from an imbalance between aggressive factors and the maintenance of mucosal integrity through the endogenous defense mechanisms. To regain the balance, different therapeutic agents are used to inhibit the gastric acid secretion or to boost the mucosal defense mechanisms by increasing mucosal production, stabilizing the surface epithelial cells or interfering with the prostaglandin synthesis. The causes of gastric ulcer pyloric ligation are believed to be due to stress induced increase in gastric hydrochloric acid secretion and/or stasis of acid and the volume of secretion is also an important factor in the formation of ulcer due to exposure of the unprotected lumen of the stomach to the accumulating acid.

Effect on ulcer index and percent protection: Antiulcer study has been performed using 100, 200 and 300 mg/kg of methanol extracts of *Dolichandrone falcate* leaves against aspirin + Pylorus ligation gastric ulcer models. The methanol extracts extract were administered to various groups, orally, twice a day. The result indicated a dose-dependent antiulcerogenic activity of extract. The best effect observed was at dose of 300 mg/kg onwards with EOCP. So for further studies on other biochemical parameters of gastric secretion or mucosal studies, a dose of 300 mg/kg was selected.
The methanolic extract of *Dolichandrone falcate* leaves against aspirin + Pylorus ligation gastric ulcer models. The result indicated that extract of *Dolichandrone falcate* decrease ulcer index in dose dependent manner. The maximum effect observed was at dose of 300 mg/kg. So for biochemical parameters of gastric secretion and mucosal studies, a dose of 300 mg/kg was selected.

Table 3: Effect of *Dolichandrone Falcate* leaves extract on Ulcer index and percent protection in aspirin + pylorus ligation induced ulcer

Group	Treatment Dose (mg/kg)	Ulcer index (mm^2/rat)	Percent protection
I	Normal control	0.00	-
II	Disease control	14.91 ± 1.32	-
III	Standard	2.83 ± 0.73**	80.13
IV	MDF (100 mg/kg)	9.34 ± 0.23	38.26
V	MDF (200 mg/kg)	7.42 ± 0.16*	61.34
VI	MDF (300 mg/kg)	4.36 ± 0.74**	73.13

Values are mean ± SEM; * P < 0.05,** P < 0.01 compared to Disease control group

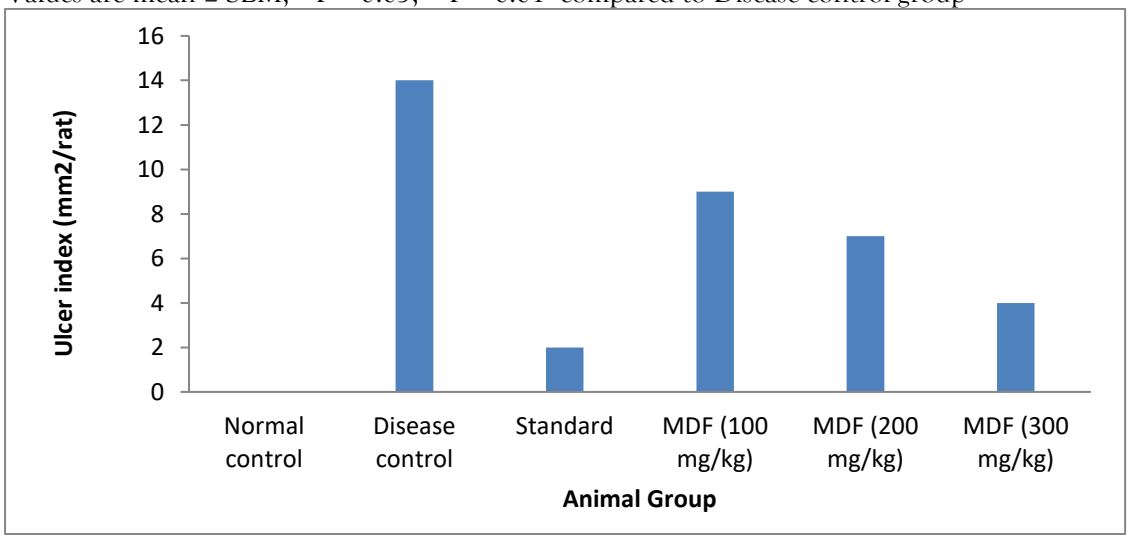

Figure 3: Effect of *Dolichandrone Falcate* leaves extract on ulcer index in aspirin + pylorus ligation induced ulcer

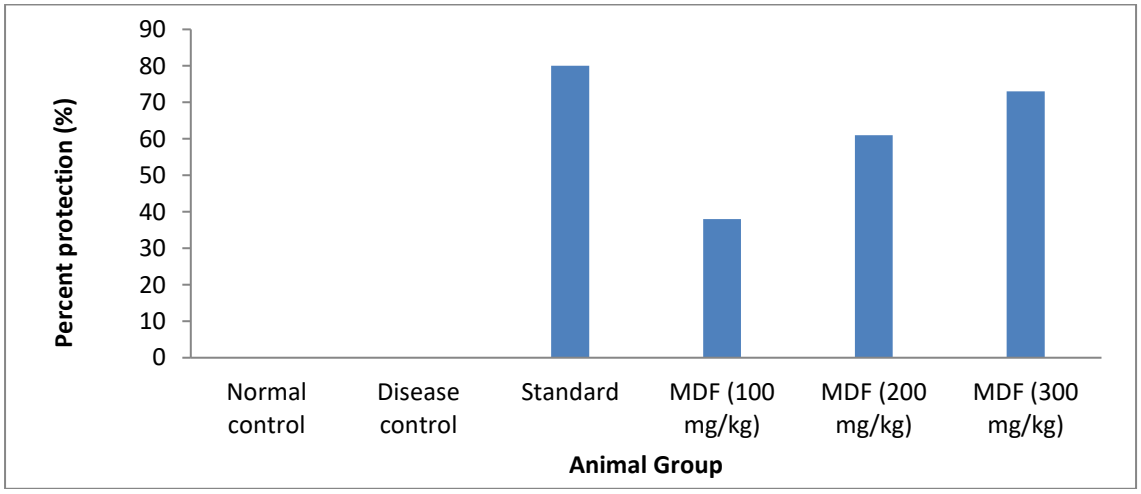

Figure 4: Effect of *Dolichandrone Falcate* leaves extract on percent protection in aspirin + pylorus ligation induced ulcer

Effect of *Dolichandrone falcate* leaves extract on volume, acid and pepsin secretion, mucin secretion, mucosal glycoprotein: The effect of methanol extract of *Dolichandrone falcate* leaves (300 mg/kg) when administered orally, twice daily for 5 days was studied for their effect on volume, acid and pepsin secretion in aspirin + 4hrs pylorus ligation rats. The methanol extract of *Dolichandrone falcate* leaves showed a trend to decrease in volume, acid-pepsin concentration and output. The result MBE were caused significant decrease on volume, acid and pepsin concentration and acid output comparable to standard.

Table 4: Effect of *Dolichandrone falcate* leaves extract on biochemical parameters of gastric secretions in aspirin + Pylorus ligation induced ulcer

Group	Treatment Dose (mg/kg)	pH	Gastric juice (mL)	Total acidity (mEq/L/4 h)	Mucus (ug Alcianblue/mL /g tissue)
I	Normal control	3.31 + 0.05	0.52 + 0.03	44.31 + 1.05	327.01 + 0.75
II	Disease control	1.59 ± 0.32	3.29 ± 0.14	121.59 ± 4.32	248.59 ± 0.43
III	Standard	4.87 ± 0.13	0.57 ± 0.07	62.87 ± 0.15	334.87 ± 0.25
IV	MDF (100 mg/kg)	2.18 ± 0.23	1.83 ± 0.23	101.3 ± 0.23	259.3 ± 0.23
V	MDF (200 mg/kg)	3.74 ± 0.16*	1.21 ± 0.74**	84.21 ± 0.14*	284.21 ± 0.74
VI	MDF (300 mg/kg)	4.21 ± 0.74**	0.74 ± 0.16*	67.74 ± 0.16**	316.74 ± 0.16**

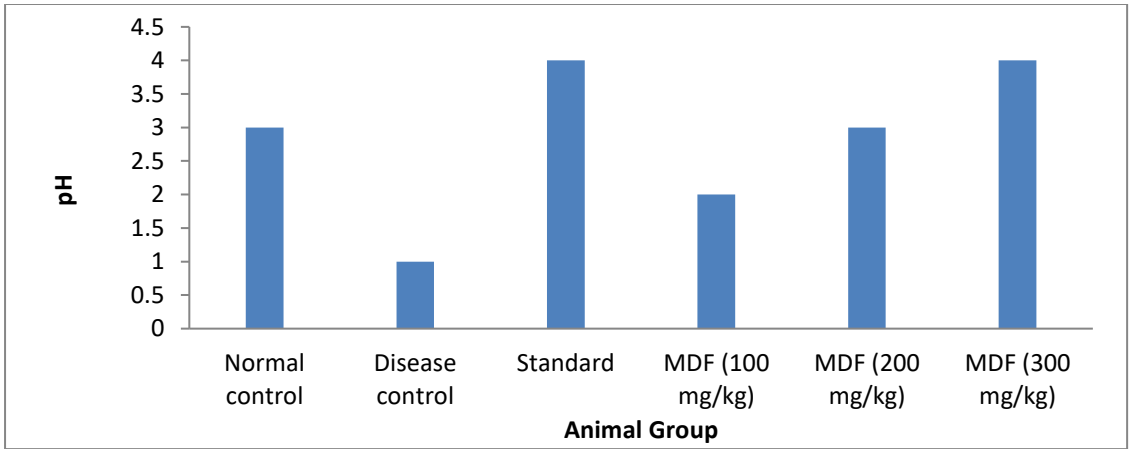

Figure 5: Effect of *Dolichandrone falcate* leaves extract on biochemical parameters (pH) of gastric secretions in aspirin + Pylorus ligation induced ulcer

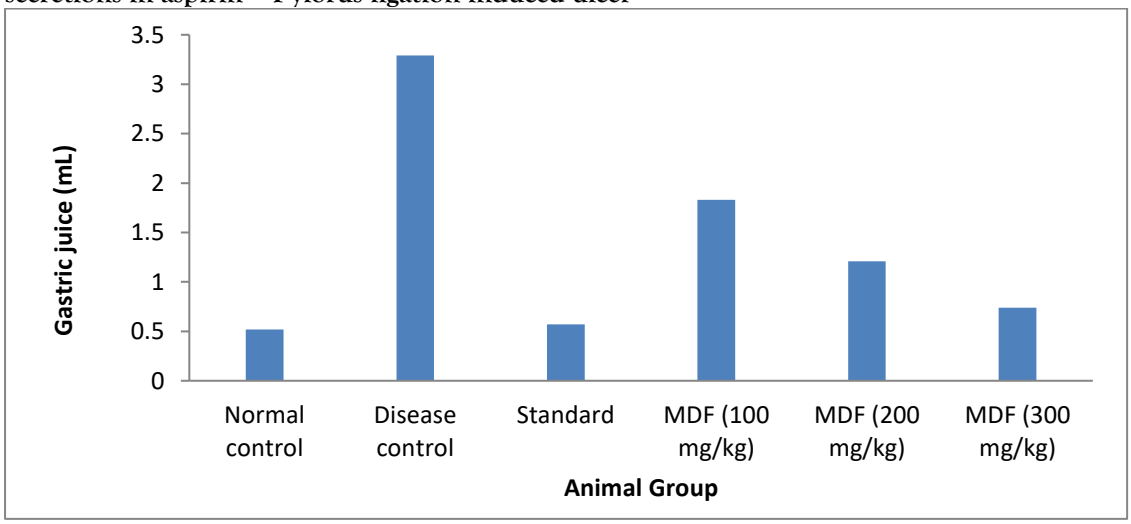

Figure 6: Effect of *Dolichandrone falcate* leaves extract on biochemical parameters (Gastric juice (mL) of gastric secretions in aspirin + Pylorus ligation induced ulcer

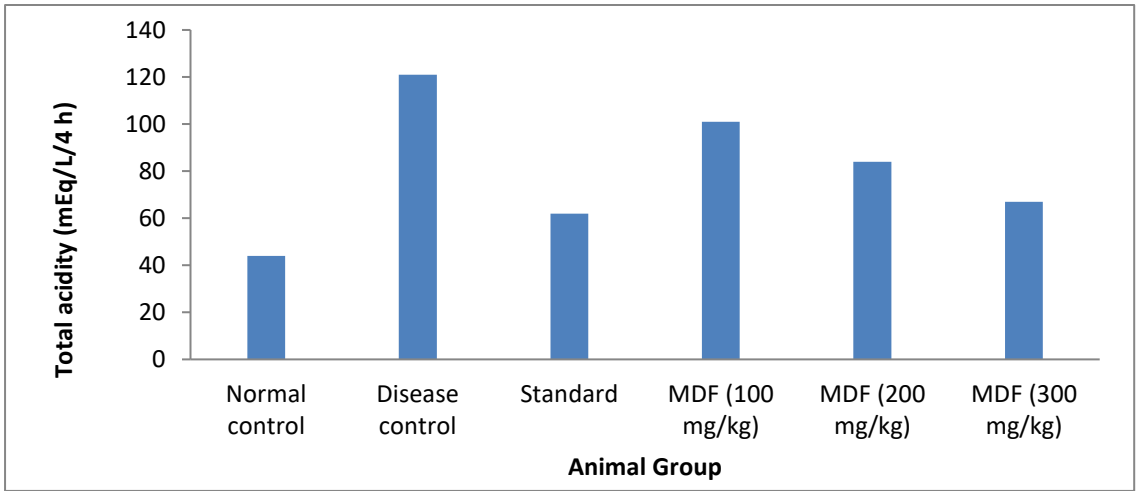

Figure 7: Effect of *Dolichandrone falcate* leaves extract on biochemical parameters (Total acidity (mEq/L/4 h) of gastric secretions in aspirin + Pylorus ligation induced ulcer

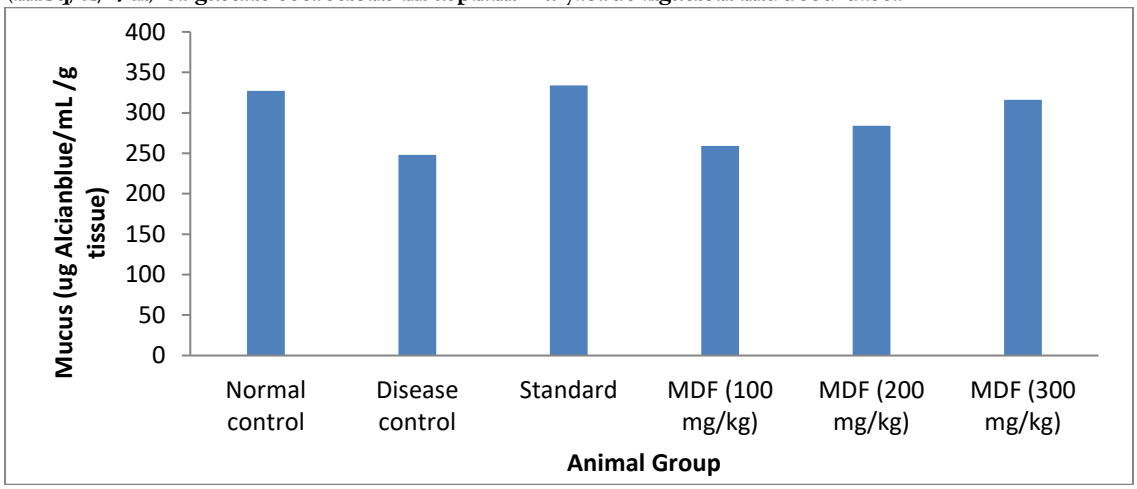

Figure 8: Effect of *Dolichandrone falcate* leaves extract on biochemical parameters (Mucus (ug Alcianblue/mL /g tissue) of gastric secretions in aspirin + Pylorus ligation induced ulcer

Peptic ulcer is results from an imbalance between aggressive factors and the maintenance of mucosal integrity through the endogenous defense mechanisms. To regain the balance, different therapeutic agents are used to inhibit the gastric acid secretion or to boost the mucosal defense mechanisms by increasing mucosal production, stabilizing the surface epithelial cells or interfering with the prostaglandin synthesis. The causes of gastric ulcer pyloric ligation are believed to be due to stress induced increase in gastric hydrochloric acid secretion and/or stasis of acid and the volume of secretion is also an important factor in the formation of ulcer due to exposure of the unprotected lumen of the stomach to the accumulating acid. Antiulcer study has been performed using 100, 200 and 300 mg/kg of methanol extracts of *Dolichandrone falcate* leaves against aspirin + Pylorus ligation gastric ulcer models.

Gastro Protective Activity of extract of Dolichandrone Falcate leaves were performed on various ulcer induce model including aspirin Pylorus ligation induced, acetic acid induced chronic ulcer, HCl- ethanol induced ulcer. Ethyl acetate and methanol extracts of *Dolichandrone Falcate* leaves were found more potent in antioxidant activity so both extract were selected for further gastroprotective activity. Methanol extracts of both plant at dose of 100, 200 and 300 mg/kg were tested for gastroprotective activity using above ulcer model.

Aspirin+pylorus ligation-induced gastric ulcer model is a useful model to induce severe ulceration in experimental animals. Aspirin causes mucosal damage by interfering with prostaglandin synthesis, increasing acid secretion and back diffusion of H+ ions. The inhibition of mucosal prostaglandin production occurs rapidly following oral administration of aspirin. This is correlated with the rapid absorption of these drugs through the mucos. In pylorus ligation, the digestive effect of accumulated gastric juice and interference of gastric blood circulation are responsible for the induction of ulceration. In pyloric ligation, the digestive effect of accumulated gastric juice and interference of gastric blood

circulation are responsible for the induction of ulceration. Aspirin was administered to PL rats; thus, aspirin further aggravated the acidity and the resistance of the gastric mucosa was decreased thereby causing extensive damage to the glandular regions of the stomach. Methanol extracts of *Dolichandrone falcate* leaves at a dose of 100 200 and 300 mg/kg b.w., were tested for gastroprotective activity using pyloric ligation rat model.

CONCLUSION

The methanol extracts extract were administered to various groups, orally, twice a day. The result indicated a dose-dependent antiulcerogenic activity of extract. The best effect observed was at dose of 300 mg/kg onwards. So for further studies on other biochemical parameters of gastric secretion or mucosal studies, a dose of 300 mg/kg was selected. The methanolic extract of *Dolichandrone falcate* leaves against aspirin + Pylorus ligation gastric ulcer models. The result indicated that extract of *Dolichandrone falcate* decrease ulcer index in dose dependent manner. The maximum effect observed was at dose of 300 mg/kg. So for biochemical parameters of gastric secretion and mucosal studies, a dose of 300 mg/kg was selected. The effect of methanol extract of *Dolichandrone falcate* leaves (300 mg/kg) when administered orally, twice daily for 5 days was studied for their effect on volume, acid and pepsin secretion in aspirin + 4hrs pylorus ligation rats. The methanol extract of *Dolichandrone falcate* leaves showed a trend to decrease in volume, acid-pepsin concentration and output. The result MBE were caused significant decrease on volume, acid and pepsin concentration and acid output comparable to standard.

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